

## WHAT IS CLAIMED IS:

1           1.   For use with a video decoder capable of decoding  
2   streaming video, a decoder buffer capable of receiving from a  
3   streaming video transmitter data packets comprising said  
4   streaming video and storing said data packets in a plurality of  
5   access units, each of said access units capable of holding at  
6   least one data packet associated with a selected frame in said  
7   streaming video, wherein said decoder buffer comprises:

8               a first buffer region comprising at least one access  
9   unit capable of storing data packets that are less immediately  
10   needed by said video decoder; and

11              a re-transmission region comprising at least one access  
12   unit capable of storing data packets that are most immediately  
13   needed by said video decoder, wherein said decoder buffer, in  
14   response to a detection of a missing data packet in said re-  
15   transmission region requests that said streaming video  
16   transmitter retransmit said missing packet.

2. The decoder buffer set forth in Claim 1 wherein at least one of said data packets are stored in said first buffer region for a period of time equal to a start-up delay time of said decoder buffer.

3. The decoder buffer set forth in Claim 1 wherein said data packets are first stored in said first buffer region and are shifted into said re-transmission region.

4. The decoder buffer set forth in Claim 1 wherein said first buffer region is separate from said re-transmission region.

5. The decoder buffer set forth in Claim 1 wherein said first buffer region overlaps at least a portion of said re-transmission region.

6. The decoder buffer set forth in Claim 5 wherein said first buffer region overlaps all of said re-transmission region.

1           7.    The decoder buffer set forth in Claim 1 wherein said  
2    first buffer region is separated from said re-transmission  
3    region by a second buffer region in which a late data packet is  
4    late with respect to an expected time of arrival of said late  
5    data packet, but is not sufficiently late to require a re-  
6    transmission of said late data packet.

1           8.    A receiver capable of receiving encoded streaming data  
2 comprising:

3               a device capable of at least one of: 1) displaying  
4 streaming video data associated with said encoded streaming data  
5 and 2) audibly playing streaming audio data associated with said  
6 encoded streaming data;

7               a decoder capable of decoding said encoded streaming  
8 data; and

9               a decoder buffer capable of receiving from a streaming  
10 data transmitter data packets comprising said encoded streaming  
11 data and storing said data packets in a plurality of access  
12 units, each of said access units capable of holding at least one  
13 data packet associated with a selected portion of said encoded  
14 streaming data, wherein said decoder buffer comprises:

15               a first buffer region comprising at least one  
16 access unit capable of storing data packets that are  
17 less immediately needed by said decoder; and

18               a re-transmission region comprising at least one  
19 access unit capable of storing data packets that are  
20 most immediately needed by said decoder, wherein said  
21 decoder buffer, in response to a detection of a

22 missing data packet in said re-transmission region  
 23 requests that said streaming video transmitter  
 24 retransmit said missing packet.

1 9. The receiver set forth in Claim 8 wherein at least one  
 2 of said data packets are stored in said first buffer region for  
 3 a period of time equal to a start-up delay time of said decoder  
 4 buffer.

1 10. The receiver set forth in Claim 8 wherein said data  
 2 packets are first stored in said first buffer region and are  
 3 shifted into said re-transmission region.

1 11. The receiver set forth in Claim 8 wherein said first  
 2 buffer region is separate from said re-transmission region.

1 12. The receiver set forth in Claim 8 wherein said first  
 2 buffer region overlaps at least a portion of said re-  
 3 transmission region.

1           13. The receiver set forth in Claim 12 wherein said first  
2           buffer region overlaps all of said re-transmission region.

1           14. The receiver set forth in Claim 8 wherein said first  
2           buffer region is separated from said re-transmission region by  
3           a second buffer region in which a late data packet is late with  
4           respect to an expected time of arrival of said late data packet,  
5           but is not sufficiently late to require a re-transmission of  
6           said late data packet.

1           15. For use with a video decoder capable of decoding  
2     streaming video, a method of buffering the streaming video  
3     comprising the steps of:

4                 receiving from a streaming video transmitter data  
5     packets comprising the streaming video and storing the data  
6     packets in a plurality of access units in a decoder buffer, each  
7     of the access units capable of holding at least one data packet  
8     associated with a selected frame in the streaming video;

9                 storing data packets that are less immediately needed  
10    by the video decoder in a first buffer region of the decoder  
11    buffer comprising at least one access unit capable of storing  
12    data packets; and

13                storing data packets that are most immediately needed  
14    by the video decoder in a re-transmission region of the decoder  
15    buffer comprising at least one access unit, wherein the decoder  
16    buffer, in response to a detection of a missing data packet in  
17    the re-transmission region, requests that the streaming video  
18    transmitter retransmit the missing packet.

16. The decoder buffer set forth in Claim 15 wherein at least one of the data packets are stored in the first buffer region for a period of time equal to a start-up delay time of the decoder buffer.

17. The decoder buffer set forth in Claim 15 wherein the data packets are first stored in the first buffer region and are shifted into the re-transmission region.

18. The decoder buffer set forth in Claim 15 wherein the first buffer region is separate from the re-transmission region.

19. The decoder buffer set forth in Claim 15 wherein the first buffer region overlaps at least a portion of the re-transmission region.

20. The decoder buffer set forth in Claim 19 wherein the first buffer region overlaps all of the re-transmission region.



.1        21. The decoder buffer set forth in Claim 15 wherein the  
2        first buffer region is separated from the re-transmission region  
3        by a second buffer region in which a late data packet is late  
4        with respect to an expected time of arrival of the late data  
5        packet, but is not sufficiently late to require a re-  
6        transmission of the late data packet.